REMARKS

Reconsideration and allowance of the application are requested.

The majority of the claims are rejected under 35 U.S.C. §102 for anticipation by U.S. patent 6, 377,636 to Paulraj. This rejection is respectfully traversed.

To establish that a claim is anticipated, the Examiner must point out where each and every limitation in the claim is found in a single prior art reference. *Scripps Clinic & Research Found. v. Genentec, Inc.*, 927 F.2d 1565 (Fed. Cir. 1991). Every limitation contained in the claims must be present in the reference, and if even one limitation is missing from the reference, then it does not anticipate the claim. *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565 (Fed. Cir. 1986). Paulraj fails to satisfy this rigorous standard.

Paulraj describes coordinated transmission and training to mitigate interference in a cellular communications system. As shown in Figure 2, separate base station transmitters 15A, 15B, and 15C in their respective cells 13A, 13B, and 13C transmit separate signal S1, S2, and S3 at the same frequency with respective sectors 17A, 17B, and 17C. Col. 6, lines 10-15. Each "signal S1, S2, . . . , Sy is additionally provided with a training pattern, or in this case a training sequence tr." Column 8, lines 42-44. So Paulraj uses the term training pattern to mean a training sequence. Figures 5A and 5B show that each different signal transmission has its own training sequence, and that training sequence does not change during the signal transmission.

In contrast, the independent claims of this case specify that different training sequences are used during the same signal transmission. For example, claim 1 recites:

> assigning a first training sequence for a first unit of information associated with the signal to be transmitted over the connection; and

> assigning a second training sequence for a second unit of information associated with the signal to be transmitted over the connection between the mobile radio and the base station transceiver,
>
> wherein different training sequences are assigned for different units of information associated with the signal to be transmitted over the connection between the mobile radio and the base station transceiver.

Different training sequences are assigned for different units of information associated with the same signal to be transmitted over the connection between the mobile radio and the base station transceiver. Paulraj only teaches using the same training sequence for the entire signal transmission, e.g., signal transmission S1.

Paulraj does not teach "changing a training sequence in a signal during transmission of the signal over a connection between a base station transceiver in the network and a mobile radio," as recited in claim 10. Nor does Paulraj disclose "a training sequence controller configured to *change a training sequence used during a signal transmission over the connection between the base station transceiver and the mobile station*," as recited in claim 19. Claim 25 recites a training sequence hopping controller that determines a training sequence hopping pattern for the signal connection between the base station transceiver and the mobile station. The training sequence hopping pattern includes "*different training sequences to be used during the signal transmission between the base station transceiver and the mobile station.*" The mobile station in claim 42 similarly includes a training sequence hopping controller that determines a training sequence hopping pattern for a signal transmission to a base station, "wherein the training sequence hopping pattern includes *different training sequences to be used during the signal transmission between the base station transceiver and the mobile station.*"

The inventors recognized that with training sequence hopping, different training sequence cross-correlations between the training sequence associated with a desired data burst and a training sequence associated with an interfering data burst occur during a signal transmission. Most training sequence cross-correlations are low, and typically only a small number of the total bursts for a signal transmission are normally adversely affected by higher cross-correlations. As a result, training sequences in each data burst may be used reliably to distinguish between bursts related to different users as well as to model the current radio channel supporting a connection. Unlike the fixed training sequence assigned to signal transmissions in Paulraj, the training sequence hopping in accordance with the present invention ensures that worst interference scenarios do not prevail for longer than one training sequence hopping interval as opposed to the duration of the entire connection. Training sequence hopping also eliminates the difficult task of training sequence planning.

The Examiner applies several other references that fail to remedy the deficiencies of Paulraj. Neither Menzel, Balakrishnan, Bergkvist, Dogan, nor Suonvieri teach training sequence hopping for a signal transmission.

The application is in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

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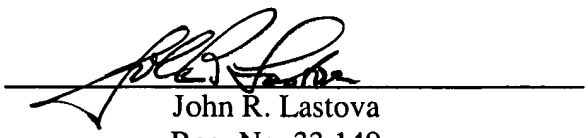
By: 
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